

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT



WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

08.3.2005

FOR FURTHER ACTION

See paragraph 2 below

Applicant's or agent's file reference
PC-9360

International application No.
PCT/JP2004/19781

International filing date (day/month/year)
24.12.2004

Priority date (day/month/year)
26.12.2003

International Patent Classification (IPC) or both national classification and IPC
Int.Cl' **G11B5/65,5/738,5/84,5/851**

Applicant

Kabushiki Kaisha Toshiba

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion

17.02.2005

Name and mailing address of the ISA/JP

Japan Patent Office

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/19781

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
 - a sequence listing
 - table(s) related to the sequence listing
 - b. format of material
 - in written format
 - in computer readable form
 - c. time of filing/furnishing
 - contained in the international application as filed.
 - filed together with the international application in computer readable form.
 - furnished subsequently to this Authority for the purposes of search.
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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10/583951

AP3 Rec'd PCT/PTO 21 JUN 2004

International application No.

PCT/JP2004/19781

**WRITTEN OPINION OF THE
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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-19</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>1-19</u>	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	<u>1-19</u>	YES
	Claims	_____	NO

2. Citations and explanations

Concerning claims 1-19

D1:JP 2003-313659 A (Kabushiki Kaisha Toshiba)

2003.11.06 SEE WHOLE DOCUMENT (Family: none)

D2:JP 9-204651 A (Kabushiki Kaisha Toshiba)

1997.08.05 SEE WHOLE DOCUMENT (Family: none)

D3:JP 2002-222517 A (SONY CORP.)

2002.08.09 SEE WHOLE DOCUMENT (Family: none)

D4:JP 9-102419 A (ASAHI KOMAGU K.K.)

1997.04.15 SEE WHOLE DOCUMENT (Family: none)

D5:JP 2002-25032 A (SONY CORP.)

2002.01.25 SEE WHOLE DOCUMENT & US 2002/15864 A1

D6:JP 2002-342908 A(SONY CORP.)

2002.11.29 SEE WHOLE DOCUMENT & US 2002/187368 A1

D7:JP 2001-291230 A(SONY CORP.)

2001.10.19 SEE WHOLE DOCUMENT & US 2001/36564 A1

D8:JP 2003-272120 A(HITACHI LTD.)

2003.09.26 SEE WHOLE DOCUMENT (Family: none)

Claims 1-19 meet the requirements with respect to novelty and inventive step.

Each of D1-D8 discloses a magnetic recording medium, consisting:
a substrate,

at least one of undercoating layer formed on the substrate,

and a magnetic recording layer which is formed on the undercoating layer and includes a magnetic crystal grains and a grain boundary field which encloses the magnetic crystal grain.

However, D1-D8 do not disclose the technical feature of [the grain boundary field includes Ti oxide, and the ratio of the substance amount of the Ti oxide in the magnetic recording layer is 5 mol% or more and 15 mol% or less, and the Ti oxide comprises at least TiO and/or Ti₂O₃].

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